

Notice of Allowability

Application No.

10/712,017

Examiner

Michael Trinh

Applicant(s)

WATANABE ET AL

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed June 16, 2005.
2. ☒ The allowed claim(s) is/are 1-3 and 5-13.
3. ☒ The drawings filed on 14 November 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____



Michael Trinh
Primary Examiner

Art Unit: 2822

DETAILED ACTION

*** This office action is in response to Applicant's Amendment filed June 16, 2005. Claims 1-3,5-13 are pending.

Allowable Subject Matter

1. Claims 1-3 and 5-13 are allowed.
2. The following is a statement of reasons for the indication of allowable subject matter:
Applicant's amendment and convincing remarks filed June 16, 2005 have overcome the rejections of record. The references of record including Sachiko (JP-11-168052), Takamitsu (JP-2001-274062), Koji (JP-2002-164302), etc., alone or in combination, do not anticipatively disclose each and every aspect of the method for forming a pattern, or fairly make a prima facie obvious case of the claimed method, in combination with other processing claimed limitations as recited in base claims, the inclusion of, such as in claim 1, forming a resist film on top of the workpiece film formed on a substrate, the resist film having a first glass transition temperature; disposing a mask and irradiating the resist film with a first energy beam through the mask; forming a first resist pattern by developing the resist film after applying the first energy beam; irradiating the first resist pattern with a second energy beam after removal of the mask, to thereby effect a crosslinking reaction in the first resist pattern, and so that the first resist pattern is caused to have a second glass transition temperature that is higher than the first glass transition temperature; forming a second resist pattern smaller than the first resist pattern by subjecting the first resist pattern to heat treatment after applying the second energy beam, the heat treatment being performed at a temperature that is higher than the first glass transition temperature; and patterning the workpiece film by use of the second resist pattern as a mask.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael M. Trinh whose telephone number is (571) 272-1847. The examiner can normally be reached on M-F: 8:30 Am to 5:00 Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on (571) 272-1852. The fax phone numbers for the organization where this application proceeding is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

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Michael Trinh
Primary Examiner